FARM

5d
Mo

HOME

Monsanto®

# PENTA

(PENTACHLOROPHENOL, TECHNICAL)

# WOOD PRESERVATIVE

***for maximum protection against***

**DECAY, TERMITES AND WOOD DESTROYING INSECTS**

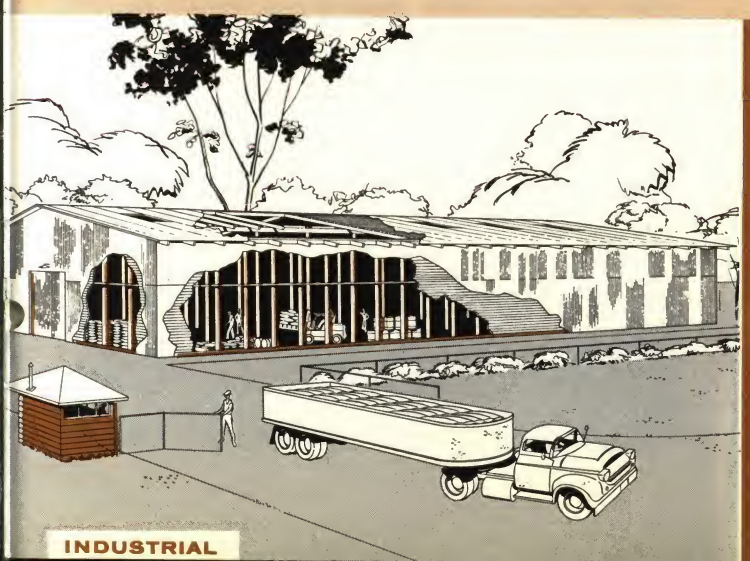
In home or industrial construction, in public buildings—*anywhere* where long service life of wood is desired, Penta gives the required protection against rot and insect attack.

Penta treated wood, when properly processed, is clean, dry and easy to handle. Rain or ground water will not wash Penta from the wood.

As Penta is a chemical compound—not a mixture or by-product—it can be depended upon for absolute uniformity.

The cost of Penta treatment is a very small percentage of the total construction cost. The following pages give more detailed attention to specific features of Penta and Penta treatment.

MONSANTO CHEMICAL COMPANY
Organic Chemicals Division, St. Louis, Missouri



INDUSTRIAL

INLAND WATERWAYS

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# PENTA

(PENTACHLOROPHENOL)

### What PENTA is

Penta is an outstanding wood preservative. It is a dry, grayish brown, flaky chemical compound, which is dissolved in oil and applied to wood as a solution. Penta is a chemical with a fixed identity and therefore does not vary in effectiveness.

### Methods for Applying PENTA Solutions to Lumber

Pressure treatment offers the most effective protection, because Penta is deposited *uniformly* throughout the wood. Pressure treatment is a commercial process used by wood treating companies and large lumber suppliers. Properly formulated and applied, Penta treatments do not cause wood to swell, shrink, or warp.

Wood may also be protected against decay organisms and termites by spray, brush or immersion treating methods. The effectiveness of such methods hinges on time and frequency of application factors and the species of wood involved.

### How Long PENTA Protection Lasts

Penta cannot be washed out by rain or ground water. Actual service records, under severe outdoor exposure to decay and termites, show Penta pressure-treated forest products have already outlived untreated material by more than five times.

### Cost of PENTA Treatment

Cost of pressure treatment with Penta is no more than treatment with other comparable recognized wood preservatives. Quantity, grade, species of wood, and moisture content must be considered. Treating plants will be happy to give accurate free estimates for specific jobs. Vulnerable wood materials used in home construction can be treated for 1% to 3% of the total construction cost.

### How PENTA Solutions Preserve Wood

Penta is highly toxic to all forms of wood destroying fungi and insects. Wood properly treated with Penta will resist these destroyers. In the pressure treating process, the Penta-in-oil solution is forced uniformly into the wood structure and deep into the actual wood cells. After treatment, the petroleum carrier evaporates, leaving the Penta crystals behind, deposited securely in the cells. These crystals will protect the wood for years against attack by rot or insects.

### Where to Buy PENTA Pressure-Treated Lumber

It can be bought through any large lumber dealer or direct from more than 90 treating plants throughout the country. For the name of the treating plant nearest you, see page 4.

## advantages

#### Dimensional Stability

Penta pressure-treatment helps provide dimensional stability to wood in both lumberyard stocks and actual service. In addition to offering maximum cleanliness both in appearance and handling, water-repellent Penta treatment prevents dimensional distortion. Because Penta is oil-borne, this resistance to swelling, shrinking and warping is gained without having to re-wet and re-dry wood that already has been air- or kiln-dried.

#### Lasting Protection

Because Penta is insoluble in water, neither humidity nor precipitation can cause the preservative to leach out. In addition, once the oils have volatilized from the wood, Penta crystals cannot bleed out, regardless of temperature. Penta treatment means *long* service life and substantial savings in building maintenance.

#### Ease of Handling

Penta pressure-treated wood is relatively clean, easy to handle, and nonirritating. Suppliers and construction crews who have handled treated wood indicate that Penta-treated wood offers superior materials handling advantages. Water-repellent Penta treatment will not cause lumber to harden or become brittle. There is no impairment to the wood surface that might affect workability.

#### Meets Specifications

Penta treatment may be specified to meet Federal Specification TT-W-571 and 572; AWPA Specification P8 & P9; Specifications of the Nat'l. Woodwork Mfgrs. Assoc., and others.

## application data

#### Types of Wood

Although there is some variation in the natural resistance of different species of wood to decay and insect attack, most of the commercially produced wood contains sufficient sapwood to be vulnerable to attack. Second growth wood of any species may be subject to deterioration. It is no longer safe to assume natural resistance for any wood. When in doubt, Penta treatment will insure extended service life.

#### When to Treat Wood

The most practical and economical time to treat wood is prior to construction. This time is appropriate because the wood can be pressure treated, which means more effective protection—longer service life for the wood. For best results, ordinary building lumber should be air-dried or kiln-dried before treatment. Lumber and timbers should be adequately conditioned after treatment to avoid adverse effects from excessive oil retentions. The treating plant operator can advise you on this.

#### Color and Finish of Wood

The final color of Penta treated wood is governed by the solvent. Darker oil carriers means darker wood color. Your specification of the solvent should depend entirely on the end use of the wood to be treated.

Woods given a water-repellent treatment retain their

# WOOD PRESERVATIVE

MONSANTO
**PENTA**
***wood preservative***

5d
Mo

natural color without impairment of surface cleanliness or workability.

**Versatility in Application**

From rafters to guard rails, from millwork to mine timbers, from under-roof applications to those fully exposed to weather variances, Penta-treated wood offers you an unparalleled degree of versatility as a building material.

## specifications

Here is the basic information you need to write a specification for Penta pressure treatment. You can adapt the following example to suit your particular job:

**Scope:**

Any wood product can be treated with a Penta preservative solution to extend its service life if it will be exposed to decay or insect attack. Since the amount or retention of preservative in the wood, the type of solution used and the condition of the wood after treatment are the three most essential points, the specifying agency should see that these three points are covered.

**Retention:**

Reference to the adjoining chart will help the specifying agency select the amount of Penta desired for each item treated. The minimum retention shall be 0.3 lb. of Penta per cubic foot of wood or 6 lbs. of a 5% Penta solution. More severe use conditions would dictate heavier retentions.

**Solution Type:**

Petroleum carriers for Penta vary in viscosity, color and other characteristics. Usually where paintability is not a requirement or where the slower volatilizing oils in the wood would not be detrimental, AWPA P9 or other oil carriers are acceptable. Where these oils might interfere with the end use because of staining or adverse effects upon paint, a water repellent Penta solution should be specified.

**Treatment:**

Treatment shall be by a standard pressure process and shall conform to the Standards set in Federal Specification TT-W-571 or suitable AWPA specifications. The processing details should be left to the descretion of the treating plant, but the specifying agency should stipulate the end use requirements for the treated wood so that the wood can be processed accordingly.

**Certification:**

Treating company shall furnish a notarized certificate that all pertinent details of the specification have been met.

WE'LL SEND YOU A COPY of up-to-date "Service Information on PENTAchlorophenol Treated Wood" if you'll simply send in your request on your letterhead. Write:

MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, Box 478, Dept. SC, St. Louis, Mo.

### WHERE AND HOW MUCH PENTA TO SPECIFY

The following chart can be used as a guide for specifying the proper amount of Penta retention. Since the AWPA Manual of Recommended Practice designates retention in terms of Penta rather than in terms of 5% solution, the retentions are expressed that way in the chart and represent minimum retentions.

If it is desired to specify retentions in pounds of 5% Penta solution per cubic foot, multiply the decimal given for Penta in the chart by 20, and the whole number will be the quantity of solution per cubic foot.

## where to use penta

| | Petroleum Distillate Carrier (AWPA P9 Spec.) | Paintable Type Carrier (Plus Water Repellents) |
|---|---|---|
| **HOME CONSTRUCTION** | | |
| Sills and Plates | No | 0.3 |
| Joists and Girders | No | 0.3 |
| Subflooring and Screeds | No | 0.3 |
| Studding and Rafters | No | 0.3 |
| Millwork* | No | 0.3 |
| Porch Steps and Flooring | No | 0.3 |
| Fencing | 0.3 | 0.3 |
| **INDUSTRIAL CONSTRUCTION** | | |
| Foundation Piling | 0.6 | No |
| Poles | 0.4 | No |
| Sills and Plates | 0.4 | 0.4 |
| Joists and Girders | 0.4 | 0.4 |
| Subflooring and Screeds | No | 0.3 |
| Factory Flooring | 0.3 | 0.3 |
| Roof Plank | No | 0.3 |
| Platforms and Decking | 0.3 | 0.3 |
| Posts and Fencing | 0.3 | 0.3 |
| **INSTITUTIONAL CONSTRUCTION** | | |
| Foundation Piling | 0.6 | No |
| Poles | 0.4 | No |
| Sills and Plates | 0.4 | 0.4 |
| Joists and Girders | No | 0.4 |
| Subflooring and Screeds | No | 0.3 |
| Flooring | No | 0.3 |
| Studding and Rafters | No | 0.3 |
| Millwork* | No | 0.3 |
| Stadiums and Grandstands | No | 0.3 |
| Posts and Fencing | 0.3 | 0.3 |
| **MISCELLANEOUS CONSTRUCTION** | | |
| Bridge and Dock Piling** | 0.6 | No |
| Bridge and Dock Timbers | 0.6 | No |
| Bridge and Dock Decking | 0.4 | No |
| Cooling Towers | 0.6 | No |
| Cross Arms | 0.3 | No |
| Cross Ties | 0.4 | No |
| Foundation Piling | 0.6 | No |
| Mine Props and Timbers | 0.4 | No |
| Poles | 0.4 | No |
| Posts | 0.3 | 0.3 |

*Or treated in accordance with NWMA Standards.
**For land or fresh water use.

# MONSANTO PENTA wood preservative

**The following pressure treating plants will be happy to answer any questions you may have about Penta treatment, specifications, solvents:**

## treating plants

**ALABAMA**
GULFPORT CREOSOTING COMPANY
P. O. Box 449
Mobile, Alabama
T. R. MILLER MILL COMPANY
Brewton, Alabama
WALKER WILLIAMS LUMBER COMPANY
Hatchechubbee, Alabama
WELLS TAYLOR WOOD PRESERVING CO.
4941 Court R—Central Park
Birmingham, Alabama

**ARKANSAS**
DIERKS FORESTS, INC.
P. O. Box 387
De Queen, Arkansas
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 231
North Little Rock, Arkansas

**CALIFORNIA**
KOPPERS COMPANY, INC.
Wood Preserving Division
Oroville, California
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 351
Wilmington, California
McCORMICK & BAXTER CREOSOTING CO.
P. O. Box 1728
Stockton, California
WARREN SOUTHWEST, INC.
300 Maple Street
Torrance, California

**COLORADO**
BRODERICK WOOD PRODUCTS CO.
5230 Washington Street
Denver 16, Colorado
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 6628
Denver 16, Colorado

**FLORIDA**
M. J. CARR CREOSOTING CO.
P. O. Box 755
North Miami, Florida
COLEMAN EVANS WOOD PRESERVING CO.
1074 East 8th Street
Jacksonville, Florida
GENERAL CABLE & CROSSARM CORPORATION
Palatka, Florida
OWSLEY LUMBER COMPANY
P. O. Box 1249
Pensacola, Florida
PERRY LUMBER CO.
Perry, Florida
POST & LUMBER PRESERVING CO.
P. O. Box 542
Quincy, Florida

**GEORGIA**
ATLANTIC CREOSOTING CO., INC.
P. O. Box 177
Savannah, Georgia
COASTAL PLAINS TREATING CO.
P. O. Box 209
Tifton, Georgia
ESCAMBIA TREATING COMPANY
Lewis Wood Preserving Division
P. O. Box 206
Camilla, Georgia
WILLIAM C. MEREDITH COMPANY
P. O. Box 456
East Point, Georgia
UNION LUMBER COMPANY, INC.
960 Lawrence Avenue
East Point, Georgia

**ILLINOIS**
AMERICAN CREOSOTING CORPORATION
Kettle River Company
1205 Madison
Madison, Illinois
CASSWOOD INDUSTRIES, INC.
P. O. Box 37
Beardstown, Illinois
JENNISON WRIGHT CORPORATION
22nd at Alton & Eastern Tracks
Granite City, Illinois
JOSLYN MFG. & SUPPLY COMPANY
9351 West Grand
Franklin Park, Illinois
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 270
Carbondale, Illinois
T. J. MOSS TIE COMPANY
Valley Junction
East St. Louis, Illinois

**INDIANA**
COLUMBUS WOOD PRESERVING CO.
First & Lafayette Streets
Columbus, Indiana
INDIANA WOOD PRESERVING COMPANY
Terre Haute, Indiana

**IOWA**
JOSLYN MFG. & SUPPLY COMPANY
P. O. Box 298
Tama, Iowa

**KENTUCKY**
BROWN WOOD PRESERVING COMPANY, INC.
Martin-Brown Building
Louisville, Kentucky
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 277
Russell, Kentucky

**LOUISIANA**
AMERICAN CREOSOTE WORKS, INC.
P. O. Box 110
Winnfield, Louisiana
EVR-WOOD TREATING COMPANY
P. O. Box 726
Jennings, Louisiana
INTERNATIONAL PAPER COMPANY
Wood Preserving Division
Drawer 231
De Ridder, Louisiana
JOSLYN MFG. & SUPPLY COMPANY
1680 Benton Road
Bossier City, Louisiana
JOSLYN MFG. & SUPPLY COMPANY
Harahan, Louisiana
ROY O. MARTIN LUMBER INDUSTRIES
Colfax Creosoting Company
P. O. Box 231
Pineville, Louisiana
OLIN MATHIESON CHEMICAL CORPORATION
Frost Forest Products Division
P. O. Box 1125
Shreveport, Louisiana
OLIVER TREATED PRODUCTS COMPANY
P. O. Box 671
Hammond, Louisiana
STANDARD WOOD PRESERVERS OF SHREVEPORT, INC.
P. O. Box 6488
Shreveport, Louisiana
THE URANIA LUMBER COMPANY LTD.
Urania, Louisiana

**MARYLAND**
JOSLYN MFG. & SUPPLY COMPANY
9th & Chesapeake Streets
Baltimore, Maryland
J. I. WELLS CO., INC.
Quantico Road
P. O. Box 312
Salisbury, Maryland
WOOD PRESERVING COMPANY OF BALTIMORE, INC.
4550 East Lombard Street
Baltimore, Maryland

**MINNESOTA**
MINNESOTA & ONTARIO PAPER CO.
National Pole & Treating Division
Fridley, Minnesota
THE STEWART COMPANY
421 Johnson Street, Northeast
Minneapolis, Minnesota
WHEELER LUMBER BRIDGE & SUPPLY CO.
Cass Lake, Minnesota

**MISSISSIPPI**
W. G. AVERY BODY COMPANY
3002 North Mill Street
Jackson, Mississippi
CROSBY FOREST PRODUCTS CO.
Picayune, Mississippi
CROSBY LUMBER & MANUFACTURING CO.
Crosby, Mississippi
FERNWOOD INDUSTRIES
Fernwood, Mississippi
GULF STATES CREOSOTING DIVISION AMERICAN CREOSOTING CORPORATION
Meridian, Mississippi
MISSISSIPPI WOOD PRESERVING COMPANY
Brookhaven, Mississippi
T. J. MOSS TIE COMPANY
Columbus, Mississippi
SOUTHERN PINE POST COMPANY
Wiggins, Mississippi

**MISSOURI**
INTERNATIONAL PAPER COMPANY
Wood Preserving Division
P. O. Box 1030
Joplin, Missouri
KOPPERS COMPANY, INC.
Wood Preserving Division
Box 8057 Leeds Station
Kansas City 3, Missouri
SENTINEL WOOD TREATING COMPANY
Ava, Missouri

**MONTANA**
MONTANA POLE & TREATING COMPANY
P. O. Box 1056
Butte, Montana
J. NEILS LUMBER COMPANY
Division St. Regis Paper Company
Libby, Montana

**NEW HAMPSHIRE**
KOPPERS COMPANY, INC.
Wood Preserving Division
Nashua, New Hampshire
NEW ENGLAND POLE & WOOD TREATING CORP.
Merrimac, N. H.

**NEW YORK**
WOOD PRESERVING COMPANY, INC.
401 North Midler Avenue
Syracuse 6, New York

**NEW MEXICO**
LeBUS BROTHERS
Eagle Nest, New Mexico
SHOLLENBARGER & CAZZOLA LUMBER CO.
Springer, New Mexico

**NORTH CAROLINA**
DURABLE WOOD PRESERVING CO.
P. O. Box 9128
Charlotte, North Carolina

**OHIO**
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 359
Orrville, Ohio
PERMA-WOOD, INC.
2261 North Buck Street
Cincinnati 14, Ohio

**OKLAHOMA**
SOUTHWESTERN WOOD PRESERVING CO.
Sallisaw, Oklahoma
TWO RIVERS TREATING COMPANY
Panama, Oklahoma

**OREGON**
JOSLYN MFG. & SUPPLY CO.
4823 North Lombard
Portland, Oregon
McCORMICK & BAXTER CREOSOTING CO.
P. O. Box 3344
Portland 8, Oregon
POPE & TALBOT, INC.
Wood Preserving Department
P. O. Box 186
St. Helens, Oregon

**PENNSYLVANIA**
EPPINGER & RUSSELL COMPANY
Street Road & Pennsylvania Railroad
Eddington (Bucks County) Pennsylvania
NATIONAL WOOD PRESERVERS, INC.
Eagle Road & Pennsylvania Railroad
Havertown, Pennsylvania

**SOUTH CAROLINA**
COLUMBIA WOOD PRESERVING COMPANY
P. O. Box 9424
Columbia, South Carolina
COX WOOD PRESERVING COMPANY
Cannon Bridge Road
P. O. Box 722
Orangeburg, South Carolina
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 871
Charleston, South Carolina
TAYLOR-COLQUITT COMPANY
P. O. Box 1491
Spartanburg, South Carolina

**SOUTH DAKOTA**
NORTHWEST WOOD PRESERVING COMPANY
Deadwood, South Dakota

**TENNESSEE**
AMERICAN CREOSOTE WORKS, INC.
Jackson, Tennessee

**TEXAS**
ANGELINA COUNTY LUMBER COMPANY
P. O. Box 1020
Lufkin, Texas
CONROE CREOSOTING COMPANY
Conroe, Texas
HATHEWAY PATTERSON CORPORATION
6809 Irvington Boulevard
Houston 22, Texas
INTERNATIONAL CREOSOTING & CONSTRUCTION CO.
P. O. Box 690
Texarkana, Texas
KOPPERS COMPANY, INC.
Wood Preserving Division
1919 Collingsworth
Houston, Texas
KOPPERS COMPANY, INC.
Wood Preserving Division
P. O. Box 20
Texarkana, Texas
MARSHALL WOOD PRESERVING COMPANY
Marshall, Texas
W. J. SMITH WOOD PRESERVING CO., INC.
P. O. Box 703
Denison, Texas
SOUTHERN PINE LUMBER COMPANY
Diboll, Texas
TEXAS CREOSOTING COMPANY
P. O. Box 131
Houston, Texas

**VIRGINIA**
VIRGINIA WOOD PRESERVING CORPORATION
P. O. Box 9483
Richmond, Virginia

**WASHINGTON**
A. B. CHANCE COMPANY
Chehalis, Washington
R. G. HALEY INTERNATIONAL CORP., INC.
P. O. Box 1075
Bellingham, Washington
INTERNATIONAL PAPER COMPANY
Wood Preserving Division
Longview, Washington
WEST COAST WOOD PRESERVING CO.
1118 Fourth Avenue
Seattle, Washington

**WEST VIRGINIA**
KOPPERS COMPANY, INC.
Wood Preserving Division
Green Springs, West Virginia

**WISCONSIN**
KOPPERS COMPANY, INC.
Wood Preserving Division
Superior, Wisconsin
PENTA WOOD PRODUCTS, INC.
Siren, Wisconsin

**WYOMING**
FOREST PRODUCTS TREATING CO.
P. O. Box 35
Laramie, Wyoming


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